

DRAFT

COUNCIL FOR HIGHER EDUCATION IN NEWARK

LOCAL AND STATEWIDE

ECONOMIC IMPACT

(DRAFT 4/93)

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EXECUTIVE SUMMARY

The Council for Higher Education in Newark (CHEN) is a consortium of the four public higher education institutions located in Newark. The four institutions are Essex County College, New Jersey Institute of Technology, Rutgers University - Newark campus, and the University of Medicine and Dentistry of New Jersey - Newark campus. All four campuses are located within the University Heights neighborhood in central Newark, New Jersey.

The presence of the CHEN institutions impacts the community and the City of Newark directly and indirectly. As an integral component of the community, CHEN members provide substantial economic benefits to the City of Newark, Essex County and the State. In addition to providing educational, cultural, and social resources, the higher education institutions provide immediate economic benefits. The short-term benefits are the subject of this report--the immediate economic effect of operating higher education facilities within the City. It is important to recognize that this is only one economic development role of the schools. Long-term benefits of higher education include neighborhood enhancement, human resource development, small business assistance, community service, research and development, and technology transfer. Activities that provide long-term economic enhancement to the region and society at-large are much more difficult to quantify. There are numerous CHEN resources, programs and services which cannot be quantified but nonetheless are of significant intrinsic value to the local community.

Short-term benefits include salaries to university employees, locally purchased goods and services, student expenditures and facility construction. The following activities all contribute to the local economy:

- o The CHEN institutions employ 9,248 persons. Of these, 1,854 employees (approximately 20%) live in Newark. The quality of life of these community residents are affected by the presence of a college or university in their neighborhood.
- o Direct annual expenditures total \$516 million. Estimated annual statewide expenditures of the CHEN institutions include a collective payroll of \$304 million, purchases of approximately \$103 million and student expenditures of over \$109 million. An estimated \$73 million of this total impacts Newark directly. An additional \$148 million contributes directly to the remaining Essex County regional economy.
- o When factored with an economic multiplier of 2.0, the cumulative annual statewide impact approximates \$1.03 billion of which \$146 million directly impacts the City of Newark. An additional \$296 million impacts the remainder of Essex County.

A substantial facilities construction plan has provided additional economic resources to the City of Newark as well as the region and the state. In addition to employment of local residents and purchases of goods and services from City businesses, construction expenditures provide direct and indirect employment opportunities.

- o CHEN's physical facilities alone have a replacement value exceeding \$1.25 billion dollars.
- o Within the last ten years, approximately \$295 million has been invested in facilities development on the four campuses within the University Heights area.
- o This development can be estimated to have created approximately 11,210 jobs (6,726 direct and 4,484 indirect jobs). This, in turn, translates into hundreds of millions of dollars in gross wages, adding spending power to the rest of the economy, reduction in unemployment costs and increased governmental revenues at a critical time.

The CHEN members are all publicly-supported institutions. Each institution has a unique educational mission. Although their missions vary, they all share the common objective of community service. A review of employment and purchasing data indicates their local commitment in hiring and spending practices. The workforce is extremely diverse. Of the total CHEN employee base, over half are members of ethnic minorities.

The special vendor purchasing programs of the universities and the college encourage the economic development of small and urban businesses as well as minority and women owned enterprises. Each university has specific goals for these special vendors. Most have met and/or exceeded their goals. A review of one year expenditures of the CHEN institutions indicates that over 40% of all CHEN statewide expenditures have been to small, urban, micro, minority or women owned businesses. Over \$4 million had been spent on special vendors located in Newark in a one year period. An additional \$3 million had been spent on Essex County special vendors not located in Newark.

The purpose of this report is to document CHEN's short-term economic participation in the community in Fiscal Year(FY) 1990-91. The most important long-term economic benefit of the CHEN institutions is human resource development through education. The availability of a well-trained, highly qualified workforce determines the economic state of the region. This broader subject is beyond the scope of this economic impact study. Other benefits to the community can not be quantified nor described in detail here. These include public service, health care, training and retraining,

legal services and economic and community development initiatives.

The CHEN institutions have historically enjoyed a mutually beneficial relationship with the neighborhood and the City. By understanding CHEN's economic development roles and focusing existing resources, the achievement of common community and institutional objectives can continue to be facilitated.

I. INTRODUCTION

The Council for Higher Education in Newark (CHEN) is a consortium of the four public higher education institutions located in Newark. The four institutions are Essex County College (ECC), New Jersey Institute of Technology (NJIT), Rutgers, the State University of New Jersey - Newark campus, and the University of Medicine and Dentistry of New Jersey - Newark campus (UMDNJ). All four campuses are located within the University Heights district in Newark, New Jersey.

University Heights is a community located just west of the central business district of the City. It is an area of approximately 700 acres predominantly in the Central Ward of Newark. A map indicating the location of the CHEN institutions within the City of Newark is included as Appendix A. In addition to the major campuses, other institutional campuses/complexes are also located there. For example, the area contains: St. Michael's Medical Center, Central High School, St. Benedict's Prep School, Essex County Vocational School, and the Essex County Administrative and Judicial Complex, and several active church communities. The neighborhood is experiencing redevelopment mainly as a result of new residential construction (including low and moderate income housing), commercial retail activity and construction activity of major institutions.

During the 1960's and '70's the neighborhood experienced deterioration similar to the abandonment and disinvestment found in most northeastern cities. Within this context, CHEN was established to focus existing institutional resources to improve the quality of life in the neighborhoods for its residents and the academic communities. By emphasizing the collective strengths as well as diverse attractions, the universities and college sought to serve as a catalyst in neighborhood redevelopment. The CHEN institutions have worked together for nearly two decades.

CHEN members are committed to their roles as urban institutions, serving the local community as educators, technical consultants, economic developers and colleagues in a variety of organizations and activities. With a collective student body of over 25,000, employees numbering 9,248, annual purchases of \$103 million and a physical plant and equipment valued at \$1.2 billion, they are playing a major role in the redevelopment of the area. Their resources contribute greatly to the City's economic vibrancy. They serve as an anchor and stabilizing force for the neighborhoods.

This economic impact study is limited to a few key indicators. There are substantial intellectual and cultural benefits to both the City and the universities that cannot be quantified but are nonetheless significant in terms of community enrichment.

Additional benefits accrue from the synergistic effect of the proximity of the institutions to each other. Together they create a vast inventory of resources in terms of people, facilities and programs. **The four institutions' sponsored research totaled in excess of \$70 million per year for the last few years. They create a critical mass of resources that is unique and unlikely duplicated in most urban areas.**

The CHEN institutions strengthen the local economy. CHEN contributes substantially to the local economy through payroll, purchases and student body expenditures. In addition, each institution contributes unique resources to the City in terms of facilities construction, community services, business development support and increased public safety services.

THE MEMBERS

Every institution of higher education is unique. This institutional diversity is apparent in the Newark campuses. Missions, resources, personnel, and faculty, staff and student populations vary. Legislative mandates, degrees and programs offered determine the goals and objectives of the institutions. Their daily operations are determined by these factors which result in unique community interactions.

Essex County College (ECC) is a two year, publicly supported, open-door, community college. It was established in 1966. The current campus was officially opened in 1976. It is a 22 acre campus with a 16 acre multi-level megastructure and a two-level multipurpose physical education building/day care center complex. ECC's mission is to provide quality educational programs and life-long learning activities at the most affordable cost. Admission is open to students with a wide variety of backgrounds and abilities.

The college offers three types of associate degree programs as well as numerous continuing education courses designed to enhance the professional, personal, cultural and vocational needs and interests of the community. Custom designed programs are also offered to meet specific training needs of firms and organizations. The College provides a range of support services that include remedial instruction, counseling, tutoring, child care services and special programs for veterans, senior citizens, minorities and women.

New Jersey Institute of Technology (NJIT) is the State's comprehensive technological research university located on a 40 acre, \$467 million campus in the University Heights neighborhood. Established in 1881, the university's mission is to expand knowledge through research and scholarly activities with a strong applications orientation. NJIT has four colleges: Newark College of Engineering, the School of Architecture, the College of Science and Liberal Arts; and the School of Industrial Management. The majority of the approximately 7,500 students are working towards

degrees in engineering, management, computer science and information science. Approximately one-third of these are graduate-level students. Bachelor's degree programs are offered in 19 fields, graduate degrees through the PhD are offered in over 20 different areas of specialization. NJIT's focus is on the development of technological enterprise.

Rutgers, the State University of New Jersey - Newark Campus (Rutgers) is a major public research university committed to excellence in teaching, research, and service to the community. Statewide, the University has over 47,000 students on campuses in Camden, Newark and New Brunswick. It is one of the major state university systems in the nation. The Newark campus enrolls nearly 10,000 students and offers a full range of programs. There are two undergraduate liberal arts colleges on the Newark campus--Newark College of Arts and Sciences and University College - Newark. In addition to these schools there are five other colleges on the Newark campus: The College of Nursing, the Graduate School-Newark, the School of Law - Newark, the School of Criminal Justice and the Graduate School of Management. As of July, 1993, an upper division, undergraduate School of Management will be added.

Rutgers-Newark has undergone a major transformation both physically and programmatically since the mid-1960's. Physically, the campus has added substantial new academic and student buildings. Graduate and professional degree programs have been added on campus, including eight doctoral programs which prepare students to take leadership positions in the social services, the scientific research community, in nursing and in management.

The University of Medicine and Dentistry of New Jersey (UMDNJ) is the State's public university of the health sciences. Its mission is to improve the health of all New Jerseyans through broad-based programs covering every aspect of the health sciences. Created to consolidate and unify all of the State's public programs in medical and dental education, UMDNJ was founded in 1970 by act of the State Legislature. In 1981 it was granted status as a freestanding university, in recognition of its growth and development as a statewide system for health-professions education. UMDNJ today is the nation's largest health sciences university, and is dedicated to the education of physicians, dentists, research scientists, nurses and other health service professionals; research in the basic sciences; the development of specialized care and advanced treatment techniques; and community service programs to the State's citizens.

The University's professional schools and healthcare facilities are located on four campuses in North, Central and South Jersey. Professional schools on the UMDNJ Campus are the New Jersey Medical School, New Jersey Dental School, Graduate School of Biomedical Sciences, School of Health Related Professions, and the School of Nursing. More than 2,400 students and residents receive education

and specialty training on the Newark campus. In addition to education, UMDNJ's mission also includes a commitment unique among academic health centers, to provide a full range of healthcare services to all citizens. The UMDNJ-University Hospital is the main source of healthcare for Newark residents, and provides comprehensive primary and specialty programs that are recognized among the best in the region. Also located on the Newark campus is the Community Mental Health Center, and a newly opened Doctors Office Center which houses the expanded clinical programs of the Department of Family Medicine and many other specialty services.

II. CHEN WORKFORCE

CHEN SALARY BASE

CHEN faculty and staff, full and part-time, numbered 9,248 in 1991. Combined, CHEN is the largest employer in the City of Newark. The combined annualized payroll for all CHEN employees (faculty and staff) was approximately \$332 million. In addition to these employees, several hundred students also work part-time but are not included in these figures. Many of these are on federal work study programs.

TABLE 1
CHEN EMPLOYEE SALARY BASE *

RESIDENCE	NO. OF EMPLOYEES	% OF TOTAL EMPLOYEES	PAYROLL
NEWARK	1,854	20%	\$ 44,195,614
REMAINING ESSEX COUNTY	2,909	32%	99,996,654
REMAINING NEW JERSEY	3,906	42%	159,710,304
OUT OF STATE	579	6%	28,247,622
TOTAL	9,248	100%	\$332,150,194

*FULL AND PART-TIME, EXCLUDING STUDENTS

SOURCE: See Appendix C

There are an estimated 1,854 Newark residents employed by the CHEN institutions. This comprises 20% of the total CHEN workforce. Their salaries exceed \$44 million annually. Another 32% of the workforce resides in other Essex County communities. These employees earn \$100 million annually. These two groups combine to make a CHEN Essex County workforce of 4,763 (slightly more than half the total CHEN employees) with annual payroll earnings of over \$144 million.

Over 93% of the CHEN workforce resides in New Jersey, and over one-half live in the immediate surrounding County of Essex. Those living in New Jersey other than in Essex County comprise 42% of the workforce and earn an estimated \$159 million annually. Other economic benefits to the community resulting from the CHEN workforce include an increased tax base, stabilization of property values and attraction of additional economic activity.

The salaries paid by the universities and college ultimately translate into powerful consumer expenditure streams. Those employees living and working in Newark are likely to expend a large proportion of their income in the local community. Expenditures on housing support property values in the community as well as provide needed tax revenues. Nonresidential employees are likely to expend some of their income within the City of Newark. The local economy is likely to capture some of the nonresidential employee spending stream.

Retail expenditures support the commercial establishments, and provide stability and property tax revenues. Withholding tax contributions to state and national governments provide revenues for operations and programs. In addition to the direct salary income earned by CHEN employees, the economy is further expanded as employee salaries are circulated within the economy through reinvestment by local businesses or private citizens. Each dollar spent generates additional monies within the community. There is a "ripple effect" of expenditures within the neighborhood. This multiplier effect is explained in more detail in the Conclusion (Section VI) of this report which summarizes the economic impact. **Considering a conservative multiplying effect of the cash flow resulting from the CHEN workforce payroll, over \$608 million is contributed annually to the state economy.** (The income multiplier of 2.0 is used on recommendation by the N.J. Department of Higher Education College Outcomes Evaluation Program contained in their Handbook for Calculating Short-Term Economic Impact at N.J.'s Institutions of Higher Education-March 1990.)

CHEN WORKFORCE COMPOSITION

Table 2 lists the ethnic/racial composition of the CHEN workforce. Of the full-time employees, 3,547 (almost 39%) of the workforce are black and 3,967 (43%) are white. Approximately 6% of the full-time workforce is Hispanic. Asian/Pacific Islander employees total 12% of the workforce. An additional .7% is grouped as "other" which includes any category not previously listed, international employees and those who give no classification.

TABLE 2
RACIAL/ETHNIC COMPOSITION OF CHEN WORKFORCE

RACE/ETHNICITY	NUMBER OF EMPLOYEES	% OF TOTAL WORKFORCE
WHITE (non-Hispanic)	3,967	43.2
BLACK (non-hispanic)	3,547	38.6
HISPANIC	541	5.9
ASIAN/PACIFIC ISLANDER	1,071	11.6
OTHER*	67	.7
TOTAL	9,193	100.0%

* American Indian or Alaskan Native, International and Unspecified

SOURCE: See Appendix C

III. PURCHASE OF GOODS AND SERVICES

CHEN EXPENDITURES

With estimated total annual statewide CHEN expenditures of over \$103 million, a wide variety of local and regional economic activities are supported. Expenditures for goods and services exert tremendous impact on the state and local economies. Table 3 lists the estimated total purchases of goods and services by location of vendors during a twelve month period.

TABLE 3
CHEN SUMMARY OF STATEWIDE
PURCHASES BY VENDOR LOCATION
FOR A 12 MONTH PERIOD

VENDOR LOCATION	AMOUNT	% OF TOTAL
NEWARK	\$ 10,485,532	10.2
REMAINING ESSEX COUNTY	13,877,705	13.5
REMAINING STATE	78,664,244	76.3
TOTAL	\$103,027,481	100.0

SOURCE: See Appendix C

These are one year's annual expenditures and only an indication of the volume and location of business generated by the CHEN consortium in a one year period. Obviously, purchasing activity varies from year to year depending on the institution, local and national economic conditions and the availability of goods and services.

During a 12 month period approximately \$103 million was spent on the purchase of goods and services. Of the total, approximately \$10.5 million was spent within the City of Newark alone and an additional \$13.9 was spent in the remainder of Essex County for a total of \$24.4 million within the County. In Newark, expenditures were for a variety of activities and goods. Examples of these include office supplies and services, equipment purchase and service, landscaping, maintenance and professional services.

Three-quarters of the CHEN statewide expenditures (\$79 million) are spent outside of Essex County. Some of the very large out-of-state expenditures are purchases of specialized equipment and furniture. Often, specialized equipment is only available from a few businesses thereby limiting vendor choice. Specialized computer equipment and maintenance is often purchased from national headquarters located outside of the State. However, substantial assets of these companies (sales, research and maintenance) are located in New Jersey.

The multiplier effect is used here as well to account for the economic impact of these dollars circulating within the local economy. The multiplying effect of total CHEN purchases is \$206 million. The total economic impact of the Newark expenditures alone is \$ 21 million. The total economic impact on the remaining Essex County and the state exceeds \$27 and \$159 million, respectively. This, along with other impacts are calculated and included in the summary Table 7.

CHEN SPECIAL VENDOR PROGRAMS

The CHEN institutions operate very successful Special Vendor Programs. Special Vendors are businesses which are encouraged to participate in the purchasing programs of the schools. Designated special vendors are small and micro businesses, urban businesses, women and minority owned businesses. Definitions of these special vendor categories can be found in Appendix C (Notes). These categories are currently used for the procurement recording systems.

Extreme caution must be exercised in comparing special vendor data. Special vendors were originally classified minority owned and female owned businesses only. As a result of a court decision, in early 1990 the Special Vendor classification was changed by the state from minority owned/female owned to categories based on the geographic location and size of a company regardless of race or gender. In compliance with the new regulations, the categories were changed to Urban Businesses, Micro Businesses and Small Businesses for non-construction related purchases with minority and women owned businesses classified for construction related projects only. Thus, general purchasing other than construction services no longer identifies businesses by the race and/or sex of principal owner of the company but rather by the size and location of the company.

Table 4 summarizes CHEN'S effort in identifying and encouraging special vendors to participate in purchasing activity.

TABLE 4
CHEN SPECIAL VENDOR
PURCHASE ACTIVITY
BY VENDOR LOCATION
FOR A 12 MONTH PERIOD

VENDOR LOCATION	AMOUNT	% OF TOTAL
NEWARK	\$ 4,480,715	11.0
REMAINING ESSEX COUNTY	3,169,075	7.8
REMAINING STATE	32,985,259	81.2
TOTAL	\$40,635,049	100.0

SOURCE: See Appendix C

A significant amount of CHEN purchasing expenditures has been allocated to special vendors. Statewide, \$40.6 million or 40% of total CHEN expenditures within the State were spent on special vendors. Approximately 43% of all the CHEN expenditures in Newark were for special vendors. In a twelve month period, an estimated \$ 4.5 million was spent on small, minority and women owned businesses within the City of Newark. In the remaining County, expenditures for special vendors totaled \$3.2 million. Of all CHEN expenditures for that twelve month period, over 7% was spent on special vendors within Essex County alone. Businesses in urban areas, small and micro businesses, women and minority owned businesses throughout the state benefitted from CHEN expenditures.

The CHEN institutions have established goals and targets for non-construction and construction contracts. State legislation currently mandates that each institution meet the following goals as a percentage of total non-construction purchasing activity:

Small Businesses	15%
Urban Businesses	7%
Micro Businesses	3%

Construction contractor goals are based on the scope of the project and the location of the activity. All the schools have active outreach programs established to encourage special vendor participation. Most of the institutions have met and/or exceeded their goals.

IV. STUDENT EXPENDITURES

Expenditures by CHEN students also strengthen the local economy. Table 5 characterizes the residences of students as reported to the registrars as well as estimated annual expenditures. Often, permanent mailing addresses are recorded which are usually that of parents or other relatives. It should be emphasized that these are conservative numbers due to the fact that many students living off campus do not record their temporary address with the university.

Almost all CHEN students (95%) reside within the State of New Jersey. Only 5% of the students have mailing addresses outside of state. The students are enrolled in graduate and undergraduate programs, both full and part-time.

Almost half of the CHEN student body resides in Essex County and of these, approximately 18% of all CHEN students (4,545) live in the City of Newark. Rutgers and NJIT now house a total of approximately 2,000 students on their campuses in Newark. Essex County College and UMDNJ presently have no available housing on campus. Essex County College intends to build some housing for student athletes. UMDNJ long-range plans include student housing. Rutgers and NJIT long-range plans also include additional student housing.

TABLE 5
1991 CHEN STUDENT RESIDENCE AND ESTIMATED ANNUAL EXPENDITURES

STUDENTS RESIDENCE	TOTAL	% TOTAL	ESTIMATED EXPENDITURES
NEWARK	4,556	18%	\$ 18,481,450
REMAINING ESSEX COUNTY	7,430	29%	33,928,705
REMAINING N.J.	12,345	48%	57,255,812
OUT OF STATE	1,323	5%	8,007,020
TOTAL	25,654	100%	\$117,672,987

SOURCE: See Appendix C

It is difficult to estimate the economic impact of the student expenditures on the local community. Spending patterns vary for undergraduates and graduates; full and part-time students; lifestyle; age, sex, marital and family status of the students. Projected living expenses for an average year vary by institution. Each institution has provided estimated living expenses for their

students. Average living expenses are calculated by student status (full or part-time, graduate or undergraduate) by each institution for financial aid purposes. As expected, these figures vary from school to school. These expenditures were calculated using the number of students whose addresses indicate residency in the jurisdictions.

Conservative estimates using standards ascertained by respective financial aid departments indicate \$109.7 million per academic year to be the total disposable income of CHEN students living in New Jersey. Disposable income is defined as money spent for personal and transportation expenses (including housing). This does not include funds spent on tuition, books, computers, supplies, etc. An estimated \$18 million in disposable income is available from students residing in the City of Newark. An additional \$33.9 million is spent by students residing in Essex County excluding the City of Newark and \$57.2 million is spent by CHEN students residing within the remaining areas of the State. Using the conservative income multiplier of 2.0, the total economic impact of CHEN student expenditures exceeds \$219 million annually.

These figures are included in the summary Tables 6 and 7 in the Conclusion. These are estimated annual expenditures and resulting economic impact which occurs during an academic year.

What is not included in the above estimated student expenditure figures is the economic impact of non-degree track students. The CHEN institutions offer a vast array of professional, technical, and remedial continuing education courses which are not part of a formal degree program. These programs offer courses in subjects such as computer skills, health related certifications, professional license preparation, etc. Some of these courses are offered in cooperation with state agencies, businesses and industry groups, professional associations and other non-profit organizations. The CHEN institutions estimate over 13,865 registrants for these non-degree track courses provided on the Newark campuses. This is a course headcount and may include duplicates. Approximately 80% of these students attend at least one session and most an average of 5 classes on a Newark campus.

Expenditures of these students have not been included in the total estimated annual economic impact due to inability to accurately estimate the impact of these type of courses. Their varying course lengths and specialized nature are not easy to quantify. However, these courses attract a sizable population to the City and are a major academic and financial resource of the institutions.

V. NEIGHBORHOOD DEVELOPMENT

EXISTING FACILITIES

The CHEN campuses represent a substantial capital investment in physical plant, resources and equipment within the University Heights neighborhood. Current estimates of the replacement value for the CHEN higher education facilities is in excess of \$1.25 billion. The neighborhood has experienced a recent surge in institutional as well as residential and commercial construction activity within the past decade. Within the last five years the campuses have experienced significant growth in terms of operating budgets, programs offered, students enrolled and facilities supporting these activities.

CHEN is committed to the redevelopment of the area. The educational institutions actively participate in continuing efforts to develop retail and housing opportunities in the neighborhood. CHEN will continue to develop programs and services which meet the economic development needs of Newark and its environs. The development strategy has been to stabilize the economic base, encourage growth and improve resident economic opportunities. This is consistent with the City of Newark and the University Heights community development objectives.

Facility construction plays a vital and important role in the economic development of the neighborhood. Implementation of the facilities plans demonstrates the commitment and investment that has taken place and is proposed to be accomplished in the neighborhood. Hundreds of millions of dollars have recently been expended and more are planned to be spent on facilities within the University Heights neighborhood.

Within the past decade over \$295 million has been spent on new construction and substantial rehabilitation projects at the CHEN institutions. Appendix B lists major facility developments within the last decade. Major projects include the construction of four residential buildings for students at Rutgers and NJIT (\$42.5 million), the UMDNJ Doctors Office Center (\$55 million), NJIT Infotech Building (\$30 million), UMDNJ Cogeneration Plant (\$22 million) and Rutgers Center for Molecular and Behavioral Neuroscience (\$20 million).

It has been calculated that for every \$100 million spent on construction, some 3,800 jobs are created--60% (2,280) are direct jobs and 40% (1,520) are indirect jobs (N.J. Alliance for Action, 12/90.) Over the ten years 1982-1992, almost \$300 million had been expended by CHEN institutions on facilities development within the University Heights community. This amount of development can be estimated to have created approximately 11,210 jobs (6,726 direct and 4,484 indirect jobs). This, in turn, translates into

hundreds of millions of dollars in gross wages, adding spending power to the rest of the economy, reduction in unemployment costs and increased governmental revenues at a critical time.

FUTURE ECONOMIC DEVELOPMENT

A major CHEN initiative now in the planning stage is the development of a science park in the University Heights area. The Science Park initiative is a joint effort by the City of Newark, community, businesses and the CHEN institutions. University Heights Science Park, Inc.'s goals represent both community and economic development of the area through the attraction of commercial, residential, and technology-based development, thereby creating jobs, increasing the tax ratable base of the city and increasing research and training opportunities.

The idea of Science Park development emerged from several years' initiatives of collaborative efforts of CHEN members, government, the business and community residents. The process resulted from a 1986 completion of a *University Heights Development Program* which reflected a consensus of those involved on the future of the University Heights neighborhood in Newark. The University Heights Community Council was established to encourage implementation of the program aimed at the comprehensive renewal of the neighborhood in a balanced and equitable manner, including housing, education and job creation initiatives.

The theme of this initiative is to complete a neighborhood currently in the early stage of redevelopment. The objective is to encourage the location of technology-based firms which will draw upon the expertise and resources of the four higher education institutions. The Science Park will offer local and regional businesses new and unique opportunities to flourish in an environment conducive to growth. The linking of promising research to commercialization can be the catalyst for continued economic and community development in the City of Newark. Investment in the Science Park will yield important benefits in terms of human and economic infrastructure not only for the City but for the region as well.

The University Heights Science Park in Newark seeks to extend benefits to the larger community. The plan is unique and unlike traditional science park development. The University Heights Science Park plan is comprehensive and incorporates a proposed 51 acre park into the existing surrounding neighborhood. A residential and campus-like atmosphere compatible and within the context of the surrounding neighborhood is proposed. Furthermore, the University Heights Science Park includes components such as one million square feet of research and development/office space, affordable housing, a day care center, open space and recreation, retail space and possibly a science park high school.

To date, \$6 million has been earmarked for specific projects within the Science Park. It is projected that the Science Park could result in a short-term investment (3-5 years) of \$90 million, and in a long-range investment (15-20 Years) exceeding \$230 million. The project could generate \$4 million in local property tax revenue when completed as well as business opportunities for local entrepreneurs who will benefit from new markets and customers. It is estimated up to 3,000 permanent jobs will eventually be located in Science Park. Many of these positions will be available to local residents, who will receive job training through city and university sponsored programs.

The University Heights area has experienced significant residential and commercial redevelopment within the last several years as a result of a collaborative effort by community, university, government, political and business leaders. The proposed Science Park will benefit and enhance the significant economic development that has already occurred.

Given the previous review of CHEN purchases of goods and services as an indication of distribution of economic activity, it can be estimated a minimum 10.2% of the science park expenditures will be allocated to businesses within Newark of which 43% would be special vendors. An additional 13.5% can be expected to be for goods and services from businesses located in Essex County.

ADDITIONAL SERVICES

The CHEN institutions augment existing municipal law enforcement with their own campus security programs. Over \$9.5 million per year is spent on public safety protection which provides a safer environment in which to live, work and do business. In this urban setting increased security is attractive to those businesses who would locate here but for the perception of a higher incidence of crime. Additionally, trash removal and street cleaning by the institutions maintain the neighborhood's appearance and enhance its image.

VI. CONCLUSION

CHEN institutions have a substantial direct impact on the local economy. Table 6 summarizes the estimated annual statewide expenditures of the CHEN institutions. Annual expenditures approximate \$516.6 million in salaries, purchase of goods and services and student expenditures. Of this amount, \$73 million or 14% of total expenditures is directly dispersed to Newark residents or businesses.

TABLE 6
ESTIMATED ANNUAL CHEN
EXPENDITURES IN N.J.
(IN MILLIONS)

	SALARIES OF F/T EMPLOYEES	PURCHASES OF GOODS & SERVICES	STUDENT EXPENDITURES	TOTAL EXPENDITURES
NEWARK	\$ 44.195	\$ 10.486	\$ 18.482	\$ 73.163
REMAINING ESSEX COUNTY	99.997	13.878	33.929	147.804
REMAINING STATE	159.710	78.664	57.256	295.630
TOTAL STATE	\$303.902	\$103.028	\$109.667	\$ 516.597

Table 7 summarizes the total economic impact by geographic region. The total economic impact includes the expenditures factored with a multiplier to quantify the full effect on the economy. When factored with an economic multiplier the total cumulative economic impact of CHEN is \$1.033 billion. Of this amount, \$146 million can be conservatively estimated to benefit the Newark community exclusively. Through its activities, the universities and college return revenue to the Newark community and contribute to the redevelopment efforts underway. More than 23% of the CHEN's expenditures are within Essex County, including Newark. The remaining statewide expenditures total \$78.7 million which, factored with a multiplier, total \$159 million.

TABLE 7
ESTIMATED ANNUAL CHEN
ECONOMIC IMPACT IN N.J.
(IN MILLIONS)

	TOTAL EXPENDITURES	ECONOMIC IMPACT*
NEWARK	\$ 73.163	146.326
REMAINING ESSEX COUNTY	147.804	295.608
REMAINING STATE	295.630	591.260
TOTAL STATE	\$ 516.597	\$ 1,033.194

*Expenditures factored with economic multiplier of 2.0

Data provided here are for estimation purposes only. Most impacts have been ascertained in a conservative manner. The total impact is therefore understated and limited to those above mentioned factors.

Substantial development of the University Heights campuses has contributed to the neighborhood's economic development. Recent development has provided neighborhood enhancement as well as an attraction for additional investment. Additional educational, commercial, and residential development is proposed within the University Heights area.

CHEN intends to continue its program of economic and community development. Special vendor participation is an integral component of the development plans for the schools. Small, micro and urban businesses, minority and women owned businesses have been and will continue to be encouraged to participate in purchasing activities.

In addition to measurable economic impacts there are numerous other activities which contribute to the economic development and revitalization of the community. Remedial and support services, Pre-College Programs, small business assistance, research and analysis, volunteer service to a variety of non-profit organizations, security and street cleaning are a few of these additional contributions which, for the most part, are non-quantified but nevertheless enhance opportunities for City residents, workers and businesses.

CHEN institutions make a substantial beneficial impact on the quality of life for Newark residents as well as the local, regional and statewide economy.

APPENDIX A

(MAP OF CHEN INSTITUTIONS WITHIN THE CITY)

**APPENDIX B
CHEN FACILITIES DEVELOPMENT
1982-1992**

	FACILITY	YEAR	MILLIONS
ECC	Gym/Day Care Center	1985	4.50
	Parking Deck	1988	7.00
	Theater	1989	2.00
	SUB TOTAL		\$13.50
NJIT	Mechanical Engineering Building	1984	4.20
	Oak Residence Hall	1985	5.60
	Center for Environmental Engineering	1989	11.00
	Information Technology Building	1990	30.00
	Cypress Residence Hall	1990	12.90
	Physical Education Building	1990	5.50
	Microelectronics Building	1991	10.00
	Electrical Engineering Building	1992	4.20
	Library/School of Industrial Management	1992	13.30
	Parking Garage	1992	13.00
	SUB TOTAL		\$109.70
RUTGERS	Alumni Athletic Field	1984	0.75
	Talbott Apartments	1986	10.00
	Parking Deck II	1988	6.50
	Woodward Residence Hall/Stonsby Dining Hall	1990	14.00
	Center for Molecular and Behavioral Neuroscience	1991	20.00
	Fiberoptic Infrastructure	1991	0.50
	Management Education Center	1992	6.70
	Golden Dome Athletic Center	1992	6.00
	Robeson Campus Center Addition	1992	5.30
	Air Conditioning Infrastructure Improvements	1992	1.50
	SUB TOTAL		\$71.25
UMDNJ	N.J. Cancer Center	1983	5.50
	N.J. Stone Center	1987	1.08
	Administration Complex #18	1987	0.25
	Parking Deck	1989	13.20
	Cogeneration Plant	1989	22.00
	Mental Health Center Addition	1990	3.60
	Heliport	1990	1.20
	Pre-Clinical Dental Lab	1990	1.20
	Doctors Office Center/Deck	1992	53.00
	SUB TOTAL		\$101.03
CHEN	GRAND TOTAL (MILLIONS)		\$295.48

APPENDIX C
NOTES

1. Table 1 - CHEN Employee Salary Base
ECC, NJIT and Rutgers estimated 1990-1991 Fiscal Year Expenditures. UMDNJ Annual Payroll as of December 31, 1991.
2. Table 2 - Racial/Ethnic Composition of CHEN Workforce
ECC FY 1991 end; NJIT FY 1991 (Department of Human Resources); Rutgers FY 1991 (Division of Personnel Services); UMDNJ Fall, 1991.
3. Table 3 - CHEN Summary of Statewide Purchases by Vendor Location and Table 4 - CHEN Special Vendor Purchase Activity by Vendor Location
ECC and UMDNJ FY 1991; NJIT Calendar Year 1991; Rutgers Estimated FY 1990-1991, University Procurement Services, Supplier Development Program (New Brunswick). Data presented attempts to use the Fiscal Year 1991 as the time period. Due to accounting systems, administrative and statewide organizational structures for the different institutions, exact alignment was not possible.

All purchases are classified as big business, small, urban or micro. Expenditures to businesses for construction/renovation work are classified as minority or women owned. Special vendors are those businesses defined by the State as follows:

Small Business - A business which has its principal place of business in New Jersey and is independently owned and operated by a management owning at least 51% interest in the business. The business must employ 100 or fewer full time positions.

Urban Business - A business which has its principal location in New Jersey in an urban center as defined by the State. It must be independently owned and operated by a management owning at least 51% in the business and employ 50 or fewer full-time positions.

Micro Business - A business which is independently owned and operated by a management owning at least 51% interest in the business. The business must employ 20 or fewer full-time persons.

Minority Business Enterprise (MBE) - Business that is principally owned by a member of a minority group.

Woman Business Enterprise (WBE) - Business that is principally owned by a woman.